Preventing Sepsis in Hospitals

Nearly 1 in 3 hospitalizations that end in death are associated with sepsis.[1] For nearly 80 percent of patients, sepsis begins outside of the hospital.[2] Those most at risk for sepsis include people who are 65 or older or younger than a year old; have recently been in a hospital, nursing home, or other healthcare facility; have chronic diseases; and/or have weakened immune systems.[3] Sepsis also is a leading cause of unplanned readmissions, and 40 percent of postsepsis patients will be readmitted to the hospital within 90 days.[4]

When not quickly identified and treated, sepsis can be fatal. Yet, it can be difficult to identify the condition because no confirmatory diagnostic test exists. Rather, the diagnosis of sepsis requires clinical judgment based on evidence of infection and organ dysfunction.[5] Missed or delayed diagnoses can have tragic consequences, and even patients who survive sepsis often experience long-term physical, psychological, and cognitive disabilities.

Four types of infections — lung, urinary tract, skin, and gut — are most often associated with sepsis.[6] Ways to identify sepsis include recognizing various signs and symptoms, such as a combination of confusion or disorientation, shortness of breath, high heart rate, fever, shivering or feeling very cold, extreme pain or discomfort, or clammy or sweaty skin. Antibiotics are used to treat sepsis.

To promote sepsis prevention, hospital leadership and clinical staff should prioritize infection prevention and control; create a sepsis protocol; educate patients and families; train staff to quickly recognize sepsis, order appropriate tests, treat the condition, and reevaluate often to assess whether antibiotics are reducing symptoms; and reassess patient management.

The following checklist offers measures by which to assess your hospital's sepsis prevention efforts and possibly identify opportunities to strengthen them.[7]

	Yes	No
Sepsis Protocols		
Has hospital leadership created a sepsis protocol?	☐	☐
• Is infection control prioritized in the protocol?	☐	☐
• Are methods to boost infection-control compliance with a focus on hand hygiene, surgical aseptic technique, antibiotic stewardship, and MRSA screening included?	☐	☐
• Does a strong link exist between infection prevention and control, sepsis early recognition, and appropriate antibiotic use programs in the protocol?	☐	☐
Patient Education		
Do hospital clinical staff stress and emphasize to patients the need to prevent infections, manage chronic conditions, get recommended vaccines (e.g., flu and pneumococcal), and seek care if signs of severe infection or sepsis are present?	☐	☐
Do patients receive plain-language educational materials about sepsis in their preferred language?	☐	☐
Are family members and caregivers included in patient education when appropriate?	☐	☐
Assessment and Treatment of Sepsis		
Do hospital clinicians screen every emergency department (ED) patient at triage?	☐	☐
Has hospital leadership considered monitoring sepsis admissions per 1,000 ED cases?	☐	☐
Are healthcare providers and front-line staff trained to recognize and understand sepsis signs and symptoms so they can identify it and treat patients as quickly as possible?	☐	☐
• Are they trained to rigorously screen patients with the top infections associated with sepsis, such as urinary tract infections, pneumonia, and abdominal infections?	☐	☐

	Yes	No
Assessment and Treatment of Sepsis (continued)		
Are elderly patients treated as high-risk patients because they represent more than half of all sepsis cases that occur?	☐	☐
• Is the threshold lowered for a positive systemic inflammatory response syndrome (SIRS) screening?	☐	☐
• Are atypical signs recognized, such as altered mental state?	☐	☐
When sepsis is suspected, does the clinician order tests to determine whether an infection is present, where it is, and what caused it?	☐	☐
When sepsis is definite or probable and shock is present or absent, are antibiotics and other medical care started within an hour of recognition to reduce the risk of serious complications or death?	☐	☐
When sepsis is possible and shock is present, are antibiotics and other medical care started within an hour of diagnosis to reduce the risk of serious complications or death?	☐	☐
When sepsis is possible and shock is absent, do patients receive rapid assessment to determine whether the cause of their illness is infectious or noninfectious, and are antibiotics administered with 3 hours if concern for infection persists?	☐	☐
Are the antibiotic dose, duration, and purpose carefully documented?	☐	☐
Are patients with sepsis frequently assessed?	☐	☐
• Is antibiotic therapy reassessed 24 to 48 hours or sooner to change therapy as needed?	☐	☐
• Is the antibiotic type, dose, and duration verified for accuracy?	☐	☐
Are intravascular access devices promptly removed in patients with sepsis after other vascular access has been established?	☐	☐
Are hospital providers held accountable for initiating the sepsis protocol within the critical time window?	☐	☐
Do clear protocols exist for transitioning acute patients to the intensive care unit?	☐	☐

	Yes	No
Assessment and Treatment of Sepsis (continued)		
Do critical care physicians reevaluate vasopressor guidelines to determine which vasopressors are most effective against septic shock?	☐	☐
• Do they stay informed about the evolving evidence base and adjust their practices and protocols to reflect that evidence?	☐	☐
Are hospital clinical staff trained to better manage the discharge instructions and prescriptions for patients recovering from sepsis to prevent readmission of these patients?	☐	☐
Community Outreach and Collaboration		
Does the hospital clinical staff collaborate with area health departments and other healthcare facilities and practices regarding infection control, antibiotic selection, immunization, and sepsis screening?	☐	☐

Resources

For more information about prevention and management of sepsis, see MedPro's *Risk Resources: Sepsis*.

Endnotes

[1] Rhee, C., Dantes, R., Epstein, L., Murphy, D. J., Seymour, C. W., Iwashyna, T. J., . . . Klompas, M. (2017). CDC Prevention Epicenter Program. Incidence and trends of sepsis in US hospitals using clinical vs claims data, 2009-2014. *JAMA, 318*(13):1241-1249. doi: 10.1001/jama.2017.13836

[2] Ibid.

[3] Centers for Disease Control and Prevention. (2016, August 23). *Vital signs: Making health care safer*. Retrieved from www.cdc.gov/vitalsigns/sepsis/

[4] Stephenson, B. (2019, September 27). *How to prevent sepsis readmissions: 4 steps to prevention.* RehabSelect. Retrieved from https://blog.rehabselect.net/prevent-sepsis-readmissions-4-steps-prevention

[5] Centers for Disease Control and Prevention, *Vital signs: Making health care safer*.

[6] Ibid.

[7] The information in this checklist is based on the following sources: Virkstis, K. (2023, March 24 [last updated]). *The 3 keys to a best-in-class sepsis prevention strategy.* Advisory Board. Retrieved from www.advisory.com/daily-

briefing/2018/04/18/sepsis-prevention; The Joint Commission. (n.d.). *Sepsis introduction*. Retrieved from www.jointcommission.org/resources/patient-safety-topics/infection-prevention-and-control/sepsis/; Centers for Disease Control and Prevention. (2022, August 9). Sepsis: Healthcare professional information. Retrieved from www.cdc.gov/sepsis/education/hcp-resources.html; Dellinger, R. P., Levy, M. M., Rhodes, A., Annane, D., Gerlach, H., Opal, S. M., … Surviving Sepsis Campaign Guidelines Committee including the Pediatric Subgroup (2013). Surviving sepsis campaign: international guidelines for management of severe sepsis and septic shock: 2012. *Critical Care Medicine, 41*(2), 580–637. https://doi.org/10.1097/CCM.0b013e31827e83af; Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C. M., French, C., … Levy, M. (2021). Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021. *Intensive Care Medicine, 47*(11), 1181–1247. https://doi.org/10.1007/s00134-021-06506-y